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Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
Washington, D.C. 20554

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JUL 11 1996

In the Matter of )  
)  
Advanced Television Systems )  
and their Impact Upon the )  
Existing Television Broadcast )  
Service )

MM Docket No. 87-~~100~~ **FEDERAL COMMUNICATIONS COMMISSION**  
**OFFICE OF SECRETARY**

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JUL 11 1996

To: The Commission - MAIL STOP 1170

**FEDERAL COMMUNICATIONS COMMISSION**  
**OFFICE OF SECRETARY**

**COMMENTS OF THE ADVANCED TELEVISION TECHNOLOGY CENTER**

**Introduction**

1. Advanced Television Technology Center, Inc. (the "Technology Center") submits the following comments addressing the Commission's *Fifth Further Notice of Proposed Rule Making* ("FNPRM") in the above-captioned proceeding, FCC 96-207, released May 20, 1996. The Technology Center is the successor to the Advanced Television Test Center (the "Test Center"), which was chartered to design and conduct testing of advanced television systems and to evaluate the test results. The Test Center carried out all of the technical and expert viewer evaluation programs which enabled the Commission's Advisory Committee to make a thorough assessment and selection from a variety of prototype systems. This work ultimately led to the development of the industry consensus that is the Advanced Television Systems Committee Digital Television Standard (the "ATSC Digital TV Standard" or "Standard"), which the Commission has proposed to adopt in the FNPRM. Earlier this year, the Test Center was reconstituted as the Technology Center, whose work is now continuing in the testing and evaluation of equipment to be used for the implementation of and transition to digital advanced television. The current members of the Technology Center include

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Westinghouse Electric Corp./CBS, Inc.; the Public Broadcasting Service; Capital Cities/ABC, Inc.; Mitsubishi Electric Corp.; Pioneer Electronic Corp.; and Sony Corporation.

2. For the reasons discussed below, the Technology Center urges the Commission to adopt and mandate the ATSC Digital TV Standard promptly and to defer any decision as to whether or when the Standard should be withdrawn at some time in the future. Adoption of the ATSC Digital TV Standard is justified because (a) television is critically important to the public as a mass medium of information and entertainment, (b) industry is united behind the ATSC Digital TV Standard, (c) the Standard is uniquely flexible and thus is different from standards the Commission has declined to adopt in the past, and (d) adoption is vital to the entire television and consumer receiver industries.

**The Digital TV Standard Should Be Adopted for Broadcast Television.**

3. The Commission's primary focus in this proceeding should be on the welfare of the consumer. The transition from analog to digital television will be a new experience for the American public, because, unlike the introduction of color television or stereophonic television audio, the old and new systems will not be compatible, old analog receivers (unless used with converters) will not be usable to display new digital video and audio, and the signals of the old system will ultimately disappear. Thus everyone must participate in the transition, and a lot of money will have to be spent by both broadcasters and consumers, before the transition will be complete. To reach the ultimate goal, the Commission has recognized that it must ensure (a) that benefits of digital technology be available to all

consumers and (b) that the transition from analog to digital be smooth (and expeditious).<sup>1/</sup> It is also important to encourage innovation and competition,<sup>2/</sup> although in harmony with, and not at the expense of, the primary objectives.

4. Most importantly, however, the Commission must ensure that the transition to digital television happens at all. A governmental imprimatur on the ATSC Digital TV Standard will be a critical element in providing the certainty to the television world -- from broadcasters and program producers to equipment manufacturers and consumers -- that the transition to digital television is real and will actually occur. Such certainty will enable broadcasters to make the requisite investments for digital television facility construction and program production, permit more widespread public acceptance of digital and high definition television, enhance the penetration of reasonably priced digital television receivers in the marketplace, and ultimately speed the transition to digital television and thus advance the time when the spectrum will become available for consideration for whatever future uses and licensing arrangements Congress and the Commission ultimately see fit.

5. Maximizing the widespread benefits of digital television to the public and ensuring a smooth transition will require that receivers be readily available at reasonable cost. Moreover, consumers should not be required to purchase more than one receiver in order to enjoy the benefits of digital technology. If they are faced with the prospect of having to purchase multiple receivers, they may decline to purchase any, or else those who purchase

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<sup>1/</sup> FNPRM at par. 29.

<sup>2/</sup> *Id.*

only one receiver will be deprived of access to some of the media they enjoy and depend upon today.

6. These considerations dictate the adoption of the ATSC Digital TV Standard. Adoption of the Standard will assure a critical mass of demand for equipment that will invoke the benefits of economies of scale at the outset, thereby enabling manufacturers to produce receivers at low cost and to market them at low prices. It will also encourage members of the public to purchase receivers early on, as they will be assured that an adequate number of services will be available for which their receivers may be used to make their investment worthwhile. In other words, mandatory use of the Standard is critical to cost control and stimulating consumer interest, both of which are important requirements for the early success of digital television.

7. Mandatory adoption of the ATSC Digital TV Standard will also facilitate the process of creating a table of channel allotments for digital television. A table cannot be created without knowing the extent to which digital television will cause interference to itself and to other services (including NTSC television) and the ability of digital television to resist interference from other signals. These characteristics must be uniform throughout the nation, and a uniform standard must be assumed when the table is created. That being so, it is more realistic to use that standard for actual operation than to attempt to predict whether uniform interference assumptions will be compatible with the operation of multiple hypothetical and unknown other technologies in actual practice.<sup>3/</sup>

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<sup>3/</sup> While it is possible to use one set of assumptions for allotment purposes and simply decree that any system anyone wishes to use must not exceed a set of assumed parameters, that is a dangerous path to take with entirely new technologies with which the Commission  
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### **No Sunset Should Be Adopted at This Time.**

8. It is premature for the Commission to build a sunset provision into the regulations it adopts at this time, because the length of time needed for the transition to digital television is unknown. The likelihood that anyone will want to deviate from the ATSC Digital TV Standard in the near future is also unknown.

9. Decisions that cannot be made with a good understanding of their consequences should not be made today. Even if it is assumed, *arguendo*, that the Commission will conclude at some time in the foreseeable future that a mandatory uniform standard is no longer desirable (an assumption the Technology Center sees no need to make at this time), exactly what it is that the Commission will conclude or when it will reach that conclusion are not known or knowable now. Thus rather than set up a target sunset date at this time, which will only set the stage for controversy later, the Commission should adopt a uniform standard now and stop. There is nothing to prevent the Commission in the future from re-opening the standards question and taking any action that may be appropriate at that time. The point is that the decision to re-open the issue should be made at the time the issue needs to be re-opened, not now.

### **Adoption of a Uniform Standard Will Not Stifle Innovation or Competition.**

10. The ATSC Digital TV Standard is the only digital television system that has been thoroughly tested, evaluated, and proven workable, practical, and effective. It permits programs to be broadcast in high definition format of remarkable quality, while maintaining

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and industry have little or no real life experience. As the Commission is well aware, theoretical predictions are no more than that and can at best only approximate what will happen when a station is actually placed in service.

the flexibility for simultaneous delivery of multiple programs in a standard definition format. It utilizes a layered architecture; is compliant with the MPEG2 international standard for video compression and transport; and offers 14 distribution formats, including multiple refresh rates and multiple scanning modes, along with ancillary data channels. It is interoperable with a variety of media and other devices, including existing NTSC program materials and consumer receivers, film, existing high definition production formats, and of course computers. It provides for future improvements by offering a packetized signal transport structure that leaves some packets unused and available for future applications. The system was designed with the express intent of allowing future flexibility, innovation, and improvement. Thus fears that adoption of the Standard now will freeze the state of the art or erect barriers to technological innovation are unjustified. There is ample room for new ideas to be introduced, without introducing the risk of a Tower of Babel that might result if the ATSC Digital TV Standard is not approved and mandated.

11. The fact that the consumer electronics industry so broadly supports the ATSC Digital TV Standard demonstrates that there is little concern about the ability to introduce future advancements.<sup>4/</sup> In contrast, the Technology Center believes that the argument advanced by some elements of the computer industry that interlaced digital video display should be prohibited reflects what may be a lack of understanding of the wide range of flexibility inherent within the structure of the ATSC Digital TV Standard. The Standard enables the three basic elements -- production, transmission, and display -- to be de-coupled

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<sup>4/</sup> The ATSC Digital TV Standard also represents a delicate balance of many different and interdependent components and reflects a consensus of many industry elements. The effectiveness of the Standard and its widespread support will be impaired if an attempt is made to break the Standard down and to use it only in part.

extensively. Indeed, the Technology Center, with the cooperation of several manufacturers, has demonstrated to the Commission that consumer-level technology is now available for products that will enable consumer receivers to display selectively a wide range of field rates, aspect ratios, type of scanning, and even colorimetry characteristics independent from the parameters chosen for production or transmission. Such technology makes it both feasible and affordable at the consumer level to combine computer scanning and any of the broadcast video scanning standards on any chosen display, regardless of its native characteristics (*e.g.*, VGA, Super VGA, interlaced, progressive scanning, etc.). The many video display options included in the ATSC Digital TV Standard are predominantly non-interlaced (progressively scanned), and that is sufficient to provide for whatever convergence of television receivers and computers may emerge in either the long- or short-term future.

12. Further, it must be remembered that adoption of the ATSC Digital TV Standard does not forbid innovation and change, even beyond the flexibility already built into the Standard. The adoption of the ATSC Digital TV Standard will jump-start the implementation of digital technology and will protect consumers by giving them expectations with regard to the usefulness of the receivers they purchase, but it will not create an impenetrable barrier to anything the Commission wishes to consider in the future if such consideration appears justified and will not harm the public.

13. The adoption of the ATSC Digital TV Standard also will not stifle or impair competition. The most important early goal of the Commission should be to bring digital television receivers to the market at affordable prices. Prices will come down only if quantities go up. The ATSC Digital TV Standard will assure sufficient demand to enable

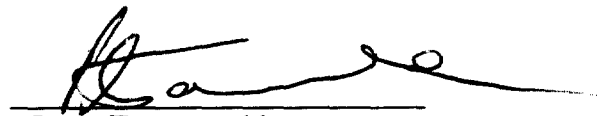
manufacturers to produce goods in enough quantity to bring prices down. Price competition is the most important kind of competition in the beginning from the consumer's point of view, and a uniform standard is necessary to foster price competition.

### **Conclusion**

14. The Commission, along with its Advisory Committee on Advanced Television Services, the Advanced Television Systems Committee, the Technology Center, and the broadcasting and manufacturing industries, all recognize the importance of the transition to digital television. The affected industry parties have labored long and hard to come up with an excellent way to facilitate that transition within a reasonable time frame and without burdening the public with unnecessary cost and uncertainty. The resulting consensus, embodied in the ATSC Digital TV Standard, offers the Commission a unique opportunity to facilitate a relatively easy and economical transition, without the squabbling that has accompanied many communications technology transitions in the past. The Commission should seize that opportunity and exercise the leadership needed to make the digital leap by adopting the ATSC Digital TV Standard for television broadcasting and all TV receiver input streams and leaving it in place until and unless future circumstances dictate otherwise.

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Respectfully submitted,

  
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July 11, 1996

Counsel for the Advanced  
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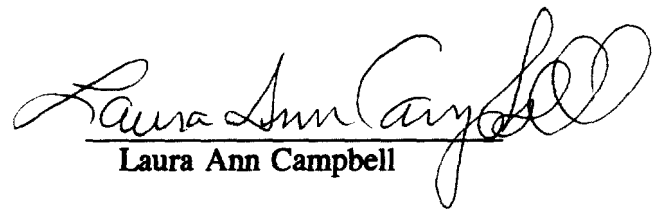


## **CERTIFICATE OF SERVICE**

I, Laura Ann Campbell, do hereby certify that I have, this 11th day of July, 1996, caused to be hand-delivered, copies of the foregoing "Comments of the Advanced Television Technology Center" to the following:

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